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| EXAMINER |
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CHORBAJI, MONZER R

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| ART UNIT | PAPER NUMBER |
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1744

DATE MAILED: 10/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/663,106

Applicant(s)

CLINE, AMOS E.

Examiner

MONZER R. CHORBAJI

Art Unit

1744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This final action is in response to the amendment received on 07/13/2006

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 7-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Branson (U.S.P.N. 3,222,221).

Regarding claim 1, Branson discloses an acoustic energy device (figure 1:22 and col.3, lines 69-74) having the following: a housing (figure 1:10) with an inner diameter (length of distance from wall 33 to unlabeled opposite wall of tank 10 in figure 1), a first housing end (figure 1:33 and 14) with an inlet orifice, a second housing end with an outlet orifice (figure 1:16 and unlabeled wall of 10), an expanded flow area (inner space of tank 10 occupied by fluid 12 between inlet 14 and outlet 16) and oscillatory means assembled within the expanded flow area (figure 1:22). Furthermore, Branson device is capable of flowing a process flow such that turbulence is created within the process flow as a result of flowing from the inlet orifice through an expanded area. This turbulent process flow is capable of causing the oscillatory means to vibrate. See MPEP 2112 and MPEP 2114.

Regarding claims 7-13, Branson teaches the following: an inherent oscillatory circuit for the acoustic device to operate, pair of first and second piezoelectric members

(figure 1:22) that are necessarily connected to the oscillatory circuit so that sonic energy is generated, the flow of the liquid through the expanded flow area (inner space of tank 10 occupied by fluid 12 between inlet 14 and outlet 16) is capable of causing the piezoelectric members to vibrate, the acoustic waves emanating from the piezoelectric members (figure 2:22 and imaginary longitudinal axis from one end of the tank to the other) inherently travel in a direction transverse to the longitudinal axis of the tank, flow partition disposed between the piezoelectric members (figure 2:15, 17 and 22) and is capable of extending in a direction parallel to the longitudinal axis of the tank, the first piezoelectric member is necessarily connected to the oscillatory circuit for the acoustic device to operate, a pulse generator (col.3, lines 71-72), the use of multiple pairs of piezoelectric members (figure 2:22) and sanitizing and homogenizing the process liquid (Branson device is capable of performing homogenizing and sanitizing fluids).

3. Claim 14 is rejected under 35 U.S.C. 102(b) as being anticipated by Bitsakis et al (U.S.P.N. 5,327,941).

Bitsakis discloses a method of treating fluids (col.1, lines 66-67 and col.2, lines 1-3) through a device (figure 10) that does not employ moving plates or moving parts (col.4, lines 58-60) where the force of the fluid causes perforated plates to vibrate (col.3, lines 65-68 and col.4, lines 1-5). Bitsakis designs perforated plates made out of polymeric materials (figure 10:50 and col.3, lines 21-27) to reduce the vibrations of the plates not to eliminate it (col.3, lines 65-68). The method includes the following: creating turbulent flow of a process fluid (this turbulence is created between the first and the second plates of figure 10 from the entry inlet 42), forcing the turbulent flow to go

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through vibrating polymeric perforated plates such that the plates necessarily produce acoustic energy (fluid in figure 10 flows through third and fourth plates) and then forcing the process fluid and the inherently generated acoustic energy through a non-linear flow path (figure 8:58) through the vibrating polymeric perforated plates (figure 8:50).

Moreover, the generated acoustic energy within Bitsakis chamber inherently does work on the process fluid. See MPEP 2114.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Branson (U.S.P.N. 3,222,221) as applied to claim 1 and further in view of Hall (U.S.P.N. 4,428,757).

Regarding claims 2-5, Branson discloses a housing having longitudinal axis extending from a center point of the first housing end to a center point of the second

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housing end (imaginary line through the center of the tank 10 in figure 1 from end wall 33 to opposite unlabeled end wall having outlet 16) and a baffle having one opening (unlabeled space between walls 15 and 17 in figure 1). Branson fails to teach plurality of baffles having through-holes such that the outer perimeter of the baffle corresponds with the inner diameter of the housing and the use of a spacer. Hall teaches plurality of baffles (figure 6:142) having through-holes such that the outer perimeter of the baffle corresponds with the inner diameter of the housing (in figure 6, the unlabeled outer perimeter of the baffles correspond with the inner wall of column 140) and the use of a spacer (unlabeled spaces between baffles in figure 6 along the inner wall of column 140). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place baffles with multiple openings into the housing of Branson as taught by Hall so that under total electric failure conditions aeration and degassing of liquids still continuous (Hall, col.4, lines 45-68 and col.5, lines 1-4).

Regarding claim 6, Branson discloses a seal cap (figure 1:33) with assembly fitting over the first end (unlabeled fitting into the end wall 33 into which inlet pipe 14 is capable of being inserted) of the housing (figure 1:10) and a nipple insert (inlet pipe 14 in figure 1 is capable of being inserted into the unlabeled fitting into the end wall 33 of tank 10). Branson fails to explicitly teach the use of o-ring. Hall teaches placing rubber gaskets (i.e., o-rings) between cylindrical high frequency sonic transducer housing (col.2, lines 35-38). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place rubber o-rings on the sonic housing of

Branson as taught by Hall so that the rubber material dampens the vibrations within the housing generated by the piezoelectric transducers of Branson.

Response to Arguments

7. Applicant's arguments filed on 07/13/2006 have been fully considered but they are not persuasive.

On page 8 of the Remarks/Arguments section, applicant argues that Branson cleaning fluid is not the same as the process fluid, that applicant process fluid is the substance that is to be worked on whereas Branson fluid is a cleaning fluid and that applicant fluid is sanitized or homogenized. The examiner disagrees. Branson fluid is capable of being sanitized or homogenized by the device. Branson device is capable of flowing process fluid through it. See MPEP 2112 and MPEP 2114.

On bottom of page 8 to top of page 9 of the Remarks/Arguments section, applicant argues that Branson does not disclose a means for cleaning a process fluid by ultrasonic means and that Branson does not teach apparatus having oscillatory means that vibrate in response to a turbulent flow of the process liquid itself, but rather teaches applying ultrasonic energy to the chute by means of electro-acoustical or other types of transducers, which are driven by an external ultrasonic generator. The examiner disagrees and refers applicant's attention to MPEP 2114.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Grange et al (U.S.P.N. 4,129,387) teaches that it is known in the

art of treating fluids that turbulent flow causes baffles to vibrate thereby producing acoustical energy.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

10. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MONZER R. CHORBAJI whose telephone number is (571) 272-1271. The examiner can normally be reached on M-F 9:00-5:30.

12. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, GLADYS J. CORCORAN can be reached on (571) 272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MRC


GLADYS JP CORCORAN
SUPERVISORY PATENT EXAMINER